**Table 20:**
**Estimated Costs for Efficiency Measures in Commercial Buildings**

**Cost Under $0.01/ kWh**
CFL Screw-in
Programmable Thermostats
High Efficiency Heat Pump (New)
Low Emissivity Windows (New)
Refrigerated Case Covers

**Cost Under $0.01 to $0.02/ kWh**
Door Heater Controls
Retrocommissioning
Efficient Motors
Vending Miser for Vending Machines
30% More Efficient Design - New Construction
DX Packaged System, CEE Tier 2, <20 Tons
High Efficiency Ice Maker
ENERGY STAR Transformers

**Cost Under $0.02 to $0.03/ kWh**
Compressed Air – Non-Controls
Commercial Reach-In Refrigerators/ Freezers
Variable Speed Drive Control, 40 HP
CFL Fixture
Induction Fluorescent 23W
Commercial Ice-makers
High Efficiency DX Packaged System
Occupancy Sensors

**Cost Under $0.03 to $0.04/ kWh**
Lighting Controls
T5 Fluorescent High-Bay Fixtures
Dual Enthalpy Economizer - from Dry Bulb
Chiller Tune Up/Diagnostics
Variable Speed Drive Control, 15 HP
Electronic HID Fixture Upgrade
Heat Pump Water Heater

**Cost Under $0.04 to $0.05/ kWh**
High Efficiency Packaged AC
Super T8 Fixture and LED Exit Sign
Dual Enthalpy Economizer

Source: GDS and Associates.

heating and cooling system; 5.8% to their lighting system; 2.7% to their windows; and 2.7% to their insulation system.

### Estimated Potential for Energy Savings

Table 20 shows energy efficiency measures for which the GDS study projected the cost per kilowatt-hour of electricity saved was less than $0.05 per kWh. The list of over 40 measures includes a wide variety – lighting, mechanical controls, appliance-related measures, fan motor options, window, and heating and cooling system measures.

## *Industrial Sector Energy Use and Efficiency*

North Carolina's industrial sector uses about 700 Trillion Btu (TBtu) of energy per year or about 28% of the total energy used in the state. Figure 29 shows that petroleum is presently the major supplier of energy to the industrial sector. Petroleum, electricity and natural gas provide about 35%, 23%, and 21% of fuel needs, respectively, while coal, biomass, and hydro together contribute a significant 21%. Note that biomass – primarily from wood and waste products – alone provide 14% of industrial energy needs. The major changes in industrial fuel mix over the past forty years has been a substantial drop in the amount of coal used in the sector balanced by a rise in natural gas and electricity use.

Figure 30 shows the historical costs for energy in the industrial sector. The costs for electricity and petroleum have represented the largest share of industrial fuel costs for many years. The rapidly rising cost for both petroleum and natural gas in 2005 and 2006 caused a dramatic increase in their contribution to total industrial energy costs.

**Figure 30: 2007 Energy Use in North Carolina Industry (700 Trillion Btu total)**

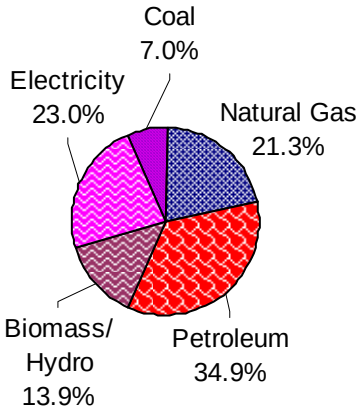


**Figure 31: Historical Energy Costs by Source in North Carolina Industry ($ million)**